Appl. No10/757,093 Amdt. dated 24 August 2005 Reply to Office Action of 25 April 2005

## Amendments to the Claims:

This listing of claims will replace all prior version, and listings, of claims in the application:

## **Listing of Claims:**

- 1. (Currently amended): An isolated nucleic acid molecule comprising nucleotides 658 to 2580 of SEQ ID NO:1, nucleotides 736 to 2580 of SEQ ID NO:1, nucleotides 1 1905 163 to 2064 of SEQ ID NO:3, or nucleotides 54 1905 217 to 2064 of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, or SEQ ID NO:9 or a nucleic acid molecule that hybridizes under stringent conditions to the complement of nucleotides 658 to 2580 of SEQ ID NO:1, nucleotides 163 to 2064 of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, or SEQ ID NO:9 and which encodes a functional β-glucuronidase.
- 2. (Currently amended): An isolated nucleic acid molecule that encodes one of the amino acid sequences of SEQ ID NO: 2, residues 27-641 or SEQ ID NO:2, SEQ ID No: 4 or, encodes residues 19-634 of SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO: 8, or SEQ ID NO: 10, or a variant thereof wherein the variant has at least 90% amino acid identity to one of SEQ ID NO: 2, residues 27-641 or SEQ ID NO:2, 4, residues 19-634 of SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO: 8, or SEQ ID NO: 10 and which encodes a functional  $\beta$  glucuronidase.

## 3 - 7 (Canceled)

- 8. (Currently amended): <u>An The</u> expression vector of claim 7, comprising a nucleic acid sequence encoding a wherein the fungal β-glucuronidase in operative linkage with a heterologous promoter, wherein the sequence encodes SEQ ID NO: 2, residues 27-641 or SEQ ID NO:2, <u>SEQ ID NO: 4 or</u>, residues 19-634 of SEQ ID NO:4, <u>SEQ ID NO:6</u>, <u>SEQ ID NO: 10</u>, or variant thereof, wherein the variant has at least 90% amino acid identity to one of SEQ ID NO: 2, residues 27-641 or SEQ ID NO:2, 4, residues 19-634 of SEQ ID NO:4, <u>SEQ ID NO:6</u>, <u>SEQ ID NO:8</u>, or <u>SEQ ID NO:6</u>, and which encodes a functional β glucuronidase.
- 9. (Currently amended): The expression vector of claim <u>8</u>7, wherein the fungal β-glucuronidase is encoded by <del>nucleotides 658 to 2580 of SEQ ID NO:1, nucleotides 736 to 2580 of SEQ ID NO:1, nucleotides <u>1-1905</u> 163 to 2064 of SEQ ID NO:3 <u>or</u>, nucleotides <u>54-1905</u> 217 to 2064 of SEQ ID NO:3, <del>SEQ ID NO:5, SEQ ID NO:7, or SEQ ID NO:9, or by a nucleic acid molecule that hybridizes under stringent conditions to the complement of nucleotides 658 to 2580 of SEQ ID NO:1, nucleotides 736 to 2580 of</del></del>

SEQ ID NO:1, nucleotides 163 to 2064 of SEQ ID NO:3, nucleotides 217 to 2064 of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, or SEQ ID NO:9, and which encodes a functional β-glucuronidase.

- 10. (Currently amended): The expression vector of claim <u>8</u>7, wherein the promoter is functional in a cell selected from the group consisting of a plant cell, a bacterial cell, an animal cell and a fungal cell.
- 11. (Currently amended): The expression vector of claim  $\underline{87}$ , wherein the vector is a binary *Agrobacterium tumefaciens* plasmid vector.
- 12. (Currently amended): The expression vector of claim <u>8</u>7, further comprising a nucleic acid sequence encoding a product of a gene of interest.
- 13. (Original): The expression vector of claim 12, wherein the product is a protein.
- 14. (Currently amended): The expression vector of claim  $\underline{87}$ , wherein the fungal  $\beta$ -glucuronidase is an enzymatically active portion thereof.
- 15. (Currently amended): A host cell containing the vector according to claim 87.
- 16. (Original): The host cell of claim 15, wherein the host cell is selected from the group consisting of a plant cell, an insect cell, a fungal cell, an animal cell and a bacterial cell.
- 17. (Original): A transgenic plant cell comprising the vector according to claim 7.
  - 18. (Original): A transgenic plant comprising the plant cell of claim 17.
- 19. (Original): A method for monitoring expression of a gene of interest or a portion thereof in a host cell, comprising:
- (a) introducing into the host cell a vector construct, the vector construct comprising a nucleic acid molecule according to claim 1, and which encodes a functional  $\beta$ -glucuronidase and a nucleic acid molecule encoding a product of the gene of interest; wherein the  $\beta$ -glucuronidase and the gene of interest are co-expressed;
- (b) detecting the presence of the  $\beta$ -glucuronidase, thereby monitoring expression of the gene of interest.

- 20. (Original): A method for transforming a host cell with a gene of interest or portion thereof, comprising:
- (a) introducing into the host cell a vector construct, the vector construct comprising a nucleic acid molecule according to claim 1, and which encodes a functional  $\beta$ -glucuronidase, such that the vector construct integrates into the genome of the host cell; wherein the  $\beta$ -glucuronidase and the gene of interest a co-expressed;
- (b) detecting the presence of the  $\beta$ -glucuronidase, thereby establishing that the host cell is transformed.
- 21. (Original): A method for positive selection for a transformed cell, comprising:
- (a) introducing into a host cell a vector construct, the vector construct comprising a nucleic acid molecule according to claim 1, and which encodes a functional β-glucuronidase;
- (b) exposing the host cell to a sample comprising a glucuronide, wherein the glucuronide is cleaved by the  $\beta$ -glucuronidase, such that an aglycone is released, wherein the aglycone is advantageous for growth of the host cell; wherein a host cell that expresses the  $\beta$ -glucuronidase grows, thereby positively selecting a transformed cell.
- 22. (Original): The method of claim 21, further comprising introducing into the host cell a vector construct comprising a nucleic acid sequence encoding a fungal glucuronide transporter.
- 23. (Original): The method of claim 21, wherein the  $\beta$ -glucuronidase is fused to a nucleic acid molecule encoding a signal peptide.
- 24. (Original): The method of either of claims 21 or 23, wherein the host cell is selected from the group consisting of a plant cell, an animal cell, an insect cell, a fungal cell and a bacterial cell.
- 25. (Currently amended): The method according to claim 21, wherein the <u>aglycone compound</u> is an auxin or a hormone.
- 26. (Original): The method according to claim 25, wherein the auxin is indole-3-ethanol.
- 27. (Original): The method according to claim 21, wherein the glucuronide is cellobiuronic acid.

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- 28. (Original): A method of releasing a compound from a glucuronide exposed to a host cell, comprising:
- (a) introducing into the host cell a vector construct, the vector construct comprising a nucleic acid molecule encoding a  $\beta$ -glucuronidase; and
- (b) exposing the host cell to the glucuronide, wherein the glucuronide is cleaved by the  $\beta$ -glucuronidase, such that the compound is released.
- 29. (Currently amended): A method of monitoring activity of a regulatory sequence controller element in a host cell comprising
- (a) introducing into the host cell a vector construct, the vector construct comprising nucleic acid sequence encoding a β-glucuronidase and a nucleic acid sequence of the-regulatory sequence controller element, wherein the nucleic acid sequence encoding the β-glucuronidase (a) encodes a protein comprising the amino sequence of SEQ ID NO: 2, residues 27-641 or SEQ ID NO:2, SEQ ID No; 4, residues 19-634 of SEQ ID NO:4, SEO ID NO:6, SEO ID NO: 8, or SEQ ID NO: 10-or
- (b) hybridizes under stringent conditions to the <u>complement eompliment</u> of nucleotides 658 to 2580 of SEQ ID NO:1, nucleotides 736 to 2580 of SEQ ID NO:1, nucleotides 736 to 2580 of SEQ ID NO:1, nucleotides  $\frac{54-1905}{217}$  to 2064 of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, or SEQ ID NO:9, and which encodes a functional  $\beta$ -glucuronidase, and wherein the nucleic acid sequence encoding the  $\beta$ -glucuronidase is in operative linkage with the regulatory sequence controller element and
- (b) detecting the presence of the  $\beta$ -glucuronidase, thereby monitoring activity of the <u>regulatory sequence</u>controller element.
- 30. (Currently amended): The method according to claim 29, wherein the <u>regulatory sequence controller element</u> is a promoter or an enhancer.

31 - 35 (Canceled)